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054090 Electrochemical Investigations of the Interface at Li/Li<sup>+</sup> Ion Conducting Channel (Supplemental)  
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## REPORT

For carrying out the experimental studies pertaining to the contract research titled “Electrochemical investigations of the interface at Li/Li<sup>+</sup> ion conducting channel”, EG&G PARC impedance analyzer, EG&G PARC potentiostat/galvanostat and Eco Chemie Autolab electrochemical systems have been under use. These equipment are 5-10 years old, and the data had been collected using out-dated computers. The purpose of requesting for additional funding of \$10000 was to replace the old computers with the latest models and to enhance the data acquisition capability. All old computers are now replaced with new computers. A part of this funds was also used for buying chemicals, cell hardware and fabrication charges.

Subsequent to replacement of old computers, the equipment are functioning satisfactorily and the data acquisition has become fast. Using these up-graded equipment, studies were undertaken to examine the effect of substrate materials on impedance behaviour of lithium diphthalocyanine (Li<sub>2</sub>Pc). Several symmetrical cells were assembled using stainless steel (SS), gold foil, gold sputtered SS, copper, nickel and lithium electrodes. It was found that the Nyquist impedance spectrum obtained with SS electrodes consisted of two semicircles with total resistance of 1700 kOhm. But the cell with gold electrodes produced a single semicircle with resistance of 450 kOhm. Similarly, different values of impedance were obtained by varying the substrate materials. It was concluded that Li<sub>2</sub>Pc exhibits chemical reactivity with metallic substrates used in the study.